Claims

1. A communication system comprising:

a narrowband-to-broadband interface (300) having a plurality of network adaptors (46, 56) interconnected to at least one switch (314-316) that provides access to a plurality of virtual channels (318-321) supported by a broadband network, the plurality of network adaptors (46, 56) further coupled to a plurality of narrowband trunks (308-312) that each support at least one of a plurality of different communication functions; and

at least two call servers (324-326) independently coupled to the narrowband-to-broadband interface (300) and arranged to control interconnection of a call between a narrowband trunk and a virtual channel of the broadband network, the at least two call servers (324-326) each responsive to a group of trunks that support common communication functions within each group such that communication system functionality is separated between the at least two call servers (324-326).

2. The communication system of claim 1, wherein the plurality of network adaptors is arranged into a plurality of network adaptor clusters (302-306).

3. The communication system of claim 2, wherein the plurality of clusters (302-306) contains network adaptors that support associated communication functions.

4. The communication system of claim 1, wherein the at least two call servers (324-326) each contain at least one group of trunks.

5. The communication system of claim, 1 wherein the plurality of network adaptors (46, 56) is distributed across the communication system.

6. The communication system of claim 1, wherein the at least two call servers (324-326) are responsible for mutually exclusive groups of trunks.

7. The communication system of claim 1, wherein interconnection of a call on a narrowband trunk is independently controlled by either of the at least two call servers (324-326).

8. The communication system of claim 7, wherein one of the at least two call servers (324-326) is selected to control of the interconnection of the call based upon a communication function supported by the narrowband trunk.

9. The communication system of claim 1, wherein a narrowband trunk supports a single communication function.

10. The communication system of claim 2, wherein the group of trunks contains trunks that are incident to a plurality of network adaptor clusters (302-306).

11. The communication system of claim 1, further comprising a plurality of geographically distributed narrowband-to-broadband interfaces (402-408) interconnected by a broadband network and wherein the at least two call servers (422-424) include:

a first call server (424) arranged to administer the control of a first group of communication services within the communication system and between the plurality of geographically distributed narrowband-to-broadband interfaces; and

a second call server (422) arranged to administer the control of a second group of communication services within the communication system and between the plurality of geographically distributed narrowband-to-broadband interfaces.

12. The communication system of claim 11, wherein the first call server (424) is an active system control device and the second call server (422) is a

standby system control device that is selectively operational to support communication system functionality.

13. The communication system of claim 11, wherein the second group of communication services contains trial services and wherein the first group of communication services contains current subscriber services supported by the communication system.

14. The communication system of claim 1, wherein the at least two call servers (422-424) have associated virtual channels.

15. The communication system of claim 14, wherein the associated virtual channels are uniquely assigned to individual call servers.

16. The communication system of claim 1, further comprising means for mapping logical addresses used by the at least two call servers into physical addresses of network adaptors, wherein the logical addresses are independent of the physical addresses.

17. The communication system of claim 16, further comprising means for translating a physical address of a first network adaptor having an associated first logical address into a different physical address of a different network adaptor having the first logical address associated therewith.

18. The communication system of claim 16, further comprising a memory for storing mapping relationships between the logical address and the physical address.

19. The communication system of claim 16, wherein the logical address is a network service access point identity.

20. The communication system of claim 16, wherein the physical address is an individual trunk circuit identity.

21. The communication system of claim 16, further comprising a fabric application interface (329, 330, 350) coupled between the at least two call servers (324-426) and the narrowband-to-broadband interface (300), the at least two call servers arranged to communicate logical addresses to the narrowband-to-broadband interface via the fabric application interface.

22. The communication system of claim 16, wherein the physical addresses are individual narrowband trunks.

23. A method of deploying a communication system containing: a narrowband-to-broadband interface (300) having a plurality of network adaptors (46, 56) interconnected to at least one switch (314-316) that provides access to a plurality of virtual channels (318-321) supported by a broadband network, the plurality of network adaptors further coupled to a plurality of trunks (308-312) that each support at least one of a plurality of different communication functions; and at least two call servers (324-326) independently coupled to the narrowband-to-broadband interface and arranged to control the interconnection of calls between narrowband trunks and virtual channels of the broadband network;

the method comprising the step of:

separating functionality associated with the plurality of network adaptors between call servers whereby each of the at least two call servers is responsible for controlling the interconnection of a group of trunks that share a common communication function.

24. The method of deploying a communication system according to claim 23, further comprising the step of distributing the network adaptors (46, 56) across the communication system.

25. The method of deploying a communication system according to claim 23, further comprising the step of mapping logical addresses used by the at least two call servers into physical addresses of network adaptors, wherein the logical addresses are independent of the physical addresses.

26. The method of deploying a communication system according to claim 25, further comprising the step of translating a physical address of a first network adaptor having an associated first logical address into a different physical address of a different network adaptor having the first logical address associated therewith.

27. A method of operating a communication system containing: first (302) and second clusters (306) of network adaptors coupled to a broadband network (446); and a plurality of exchanges (440-442) coupled to the clusters of network adaptors through a transport network (444), the plurality of exchanges each having associated call servers (324-326) responsible for controlling the routing of information between network adaptors and the broadband network and wherein the associated call servers are arranged to support differing communication system functions such that functionality is distributed between at least two call servers; the method comprising the step of:

using the first cluster (302) to route the information between the broadband network (446) and a subscriber terminal coupled to a network adaptor in the first cluster;

holding the second cluster (306) as a reserve communication resource;

detecting a failure of the first cluster (302) wherein routing of the information between the subscriber terminal and the broadband network is inhibited; and

re-configuring the transport network to cross-connect the subscriber

terminal to the broadband network via the second cluster to re-establish routing of the information between the subscriber terminal and the broadband network.

28. The method of claim 27, further comprising the step of distributing the clusters (302-306) across the communication system.

29. The method of claim 27, further comprising the step of mapping logical addresses used by the at least two call servers into physical addresses of network adaptors, wherein the logical addresses are independent of the physical addresses.

30. The method of claim 29, further comprising the step of translating a physical address of a first network adaptor having an associated first logical address into a different physical address of a different network adaptor having the first logical address associated therewith.

31. A method of upgrading system software in a communication system containing at least two call servers (422-424) coupled to a plurality of narrowband-to-broadband interfaces (402-408) that connect narrowband trunks to virtual channels of a broadband network, the at least two call servers being independently capable of supporting differing communication system functions, the method comprising the steps of:

initially using a first call server (424) to run system software that administers connection of the narrowband trunks to the virtual channels;

loading (430) a software upgrade into a second call server (422);

re-routing a subset of narrowband trunks from the first call server to the second call server;

running (432) the software upgrade on the second call server in an attempt to connect the subset of narrowband trunks to the virtual channels, the step of running occurring in tandem with a continued use of the first call

server to administer the connection of narrowband trunks to virtual channels; and

assessing (433) the effectiveness of the software upgrade in relation to communication system functionality.

32. The method of upgrading system software according to claim 31, the step of loading the software upgrade further includes the step of loading (431) current network data into the second call server.

33. The method of upgrading system software according to claim 31, further comprising the step of migrating control of substantially all narrowband trunks to the second call server.

34. The method of upgrading system software according to claim 33, further comprising the steps of:
taking the first call server off-line (434);
loading (435) the software upgrade into the first call server;
re-introducing the first call server into the communication system;
loading current network data into the first call server; and
re-routing (436) narrowband trunks from the second call server to the first call server.

35. The method of upgrading system software according to claim 31, wherein the subset of narrowband trunks are proprietary trunks belonging to a network operator of the communication system.

36. The method of upgrading system software according to claim 31, further comprising the step of mapping logical addresses used by the at least two call servers into physical addresses of network adaptors, wherein the logical addresses are independent of the physical addresses.

37. The method of ~~claim~~ 36, further comprising the step of translating a physical address of a first network adaptor having an associated first logical address into a different physical address of a different network adaptor having the first logical address associated therewith.

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